Physician Participation in Hospital Strategic Decision Making: The Effect of Hospital Strategy and Decision Content

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An exploratory study examined variation in the participation of physicians in hospital strategic decision making as a function of (1) strategic decision content or (2) hospital strategy, or both. The findings revealed that who participates is a function of decision content while how physicians participate is a function of decision content and the interaction of decision content and hospital strategy.

The hospital, or "doctor's workshop" in which physicians practice their craft, is being forced to consider more complex organizational arrangements than were used in the past. Tomorrow's decisions about competitive advantage are increasingly influenced by today's changing medical practice and health care environment (Kimberly and Zajac 1985; Begun 1985): the traditional dual hierarchy (Harris 1977) or autonomous professional organization (Scott 1982) where administrators managed health care support systems and physicians practiced medicine is no longer able to meet the needs of the fast-evolving health care

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market. Dramatically increasing health care costs (Fottler 1987) coupled with public dissatisfaction with the delivery of health care (Blendon 1989) indicate a need for increased attention to strategic decision-making processes in hospitals, because a hospital's strategic decisions determine how the organization will align itself with the environment (Jemison 1981; Files 1988).

The complex nature of this health care environment (Annison 1988) creates intricate information processing requirements for hospitals. Hospitals need to consider organizational structures and processes that will enable those organizational members who are sources of the critical information needed for strategic decision making to interact, agree on interpretations, and select courses of action. Because physicians are a source of critical strategic information, they "are increasingly involved in administrative and management responsibilities within medical care organizations" (Scott 1982, 231).

The issue of physician involvement in hospital strategic decision making is an important topic in the health care literature (McDaniel and Ashmos 1986; Shortell, Morrisey, and Conrad 1985; Morlock, Alexander, and Hunter 1985; Kovner and Chin 1985; Clemenhagen and Champagne 1984; Kaluzny and Veney 1982; Scott 1982; Greer 1984). Most researchers see a changing role for physicians in the process of making important organizational decisions because of the unstable nature of the health care environment (Shortell, Morrisey, and Conrad 1985; Deegan, A. 1982; Freidson 1985; Kimberly and Zajac 1985).

While some theoretical work has explored the management-physician relationship, very little empirical research exists that examines specifically the issue of physician participation in the strategic decision-making process. Physician participation in clinical treatment decisions is assumed and is not of research interest here. However, the role of physicians in determining the hospital's future, mission, and means for achieving strategic advantage is not at all clear and becomes, therefore, the focus of this article.

Since physicians control resources needed for the execution of strategic plans (Greer 1984; Pauly and Redisch 1973), their role in a hospital's strategic decision processes is important. Physicians generate as much as 80 percent of all medical care expenditures (Eisenberg 1986). Thus, it is unlikely that major hospital decisions are made without some physician input, although we know very little empirically about how this takes place. In one related study, Greer (1984) examined the influence of physicians in technology decisions that affected the hospitals' missions and found that physicians play only a minor

role. Shortell, Morrison, and Conrad (1985) observed that the participation of physicians on governing boards is related to hospital case mix and membership in a multiunit system.

The purpose of the present exploratory study was to obtain a more fine-tuned understanding of the behavioral determinants of physician participation in hospital strategic decision making. An information-processing view of organizations suggests that participation will vary as a function of two variables: the particular hospital's strategy type and the content of the particular strategic decision being addressed. Given the increased competition for resources, hospitals differ in their strategic approaches to organizational success (Ashmos 1988; Shortell, Morrison, and Friedman 1990; Ginn and McDaniel 1987). These differences in hospital strategies create a variety of information-processing requirements that most likely result in differences in the way physicians participate in making strategic decisions. At the same time, as the content of strategic decisions differs, creating yet another kind of information-processing requirement, the nature of physician participation also is likely to differ.

THEORY

This research is grounded in the notion that participants in decision making represent sources of information for reducing uncertainty and that differing conditions alter the need for information in strategic decision making. Hospital strategic decision making requires a capacity to process nonroutine information, and physicians represent a major source of this capacity. Processing nonroutine information, an undertaking characterized by complexity and analytical difficulty, requires values, interpretation, and discussion (Weick and McDaniel 1989). A hospital's capacity to process nonroutine information is partly a function of identifying and choosing participants in the decision-making process because different decision makers vary in their access to information, beliefs about the value of information, and abilities to interpret and analyze information. Physicians, through their training and socialization, are an important source of health care information and beliefs (Napodano 1986). It is through a physician's expertise and values that important strategic information is interpreted and analyzed.

We draw upon two somewhat complementary theories from the organization theory and strategy literatures that can be used to predict physician participation in hospital strategic decision making. One

theory is that participation in strategic decision making is fluid—that "participants come and go" (Cohen, March, and Olsen 1972, 3) as a function of the specific issue and the potential participants' interests and resources. The other theory is that the participants in strategic decision making are a stable group in which membership is secured by either access to resources (Pfeffer and Salancik 1978) or formal position in the organization.

FLUID PARTICIPATION OF PHYSICIANS

The fluid participation view suggests that physician participation in hospital strategic decision making varies according to the content or "attributes of the choice situation" (Cohen, March, and Olsen 1972, 3). As suggested by Pinfield (1986, 385), "participants and choice opportunities do not occur as streams but are connected by the content of issues to be explored in each choice opportunity." Because strategic decisions differ in the amount and kinds of uncertainty they represent (Astley, Axelson, Butler, et al. 1982), the nature of the information-processing task required for making choices differs across different decisions.

The fluid participation explanation of the strategic decision-making process is based on two notions: (1) organizations are information-processing systems (Thompson 1967; Galbraith 1973; Knight and McDaniel 1979) whose critical function is decision making (Huber and McDaniel 1986), and (2) decision makers alter their information search processes as a function of the task (Hogarth 1980; Payne 1976). At the strategic levels of the hospital the information search processes may be changed by altering the makeup of the strategic decision-making group according to differences in the decision task. For example, decision tasks that require information about the hospital's market will involve different participants than will decision tasks that require information about the hospital's operations.

In a case study examination of one decision process, Pinfield (1986) found that "participants were important as carriers of problems and solutions and the presence of participants was important for decision outcomes" (p. 380). Further, he observed participation to be fluid across the phases of the decision process, but not randomly fluid (Pinfield 1986).

CONSISTENT PARTICIPATION OF PHYSICIANS

Another explanation for physician participation in hospital strategic decision making is also based on an information processing view of

strategic decision making. However, this consistent-participation view suggests that (1) the hospital's information-processing requirements differ as a function of the hospital's strategy type rather than as a function of differences in decisions, and (2) the primary information processing for strategic decision making is done by a relatively small group at the top of the hospital hierarchy. This "upper echelon" (Hambrick and Mason 1984; Norburn and Birley 1988) is often viewed as a team with fairly stable membership whose makeup is a function of the hospital's strategy type.

A hospital's strategy represents the hospital's world view, its interpretation of the environment (Daft and Weick 1984), and the "values and cognitive bases of powerful actors in the organization" (Hambrick and Mason 1984, 183). Hospitals with different strategic orientations will differ, according to the consistent-participation view, in their perception of what information is most critical for gaining competitive advantage, and they will differ in the kinds of solutions they attach to the same problems. For example, if a hospital adopts an overall view that the best way to gain a competitive advantage is to focus on production efficiencies and protection of existing market share, then it is likely to give importance to hospital-specific information. According to the consistent-participation view, the participants in strategic decisions in this hospital will be those who can best process hospital-specific information. On the other hand, if a hospital believes that the best way of gaining a competitive advantage is to focus on unique product characteristics and to gain new markets, it is likely to give importance to market-specific information, and participants in strategic decisions will be those who can process this kind of information. In either case, the participant group will be stable because the organization's beliefs are stable (Starbuck and Hedberg 1977).

Fredrickson and Mitchell (1984) state that characteristics of an organization's strategic process tend to be consistent across decisions that are perceived as clearly strategic (Fredrickson and Mitchell 1984, 400). The approach used by Fredrickson and Mitchell has influenced subsequent research, such as that by Bourgeois and Eisenhardt (1988) who studied decision making by observing one decision in each of eight firms.

Investigating physician participation in hospital strategic decision making requires consideration of both of these theories. Do physicians participate in hospital strategic decision making as a function of the content of the strategic decision, as suggested by a fluid-participation view, or do they participate as a function of the hospital's generic strategy, as suggested by a consistent-participation view? The implica-

tion of the fluid-process view is that when hospitals identify a specific strategic issue that needs to be addressed, they are deciding, perhaps unknowingly, who participates in that decision. The implication of the consistent-process view, on the other hand, is that at the point in time when executives decide the hospital's generic strategy type, they are deciding who will participate in subsequent decisions.

The difference in these two views of physician participation relates to the choices hospitals make about what information to consider critical. Does the hospital prioritize information according to its generic strategy, or according to the decision at hand? This choice of which information to attend to is a function of the way the organization interprets its environment, and it is this interpretation that guides organizational action (Daft and Weick 1984).

STRATEGIC DECISION MAKING IN HOSPITALS

Strategic decision making requires information that enables the hospital to manage its relationship with its task environment, that is, those elements of the environment that influence the hospital's ability to accomplish its core task. In hospitals the core task is uncertain, and the technology for performing it is largely imbedded in people—that is, physicians and nurses deliver medical and nursing care primarily through the exercise of their professional judgment, although they are aided by machines that may redefine professionals' roles.

As hospitals alter their ways of achieving competitive advantage, they are frequently altering the hospital's core task. Strategic decisions that result in changes to the hospital's core task require many kinds of information. Unlike financial or marketing information, much of the information about patients, medical equipment, medical services, and licensing requirements is imbedded in physicians rather than in management reports or administrative information systems. For example, a hospital considering the expansion or elimination of an existing medical service would need information from physicians about the quality and complexity of the service, the effect on the medical community of altering the service, and so on. These important pieces of information are primarily accessible to the hospital through physicians whose medical expertise and values provide unique information-processing capabilities (Napodano 1986).

PREDICTIONS ABOUT PHYSICIAN PARTICIPATION IN STRATEGIC DECISION MAKING

Differences Due to Decision Content

The fluid-process view of participation suggests that individuals who can reduce uncertainty about a particular kind of decision are most likely those who have access to information, expertise, and understanding that others in the hospital do not have. Because decision participants' ability to reduce uncertainty differs with the nature of the uncertainty, we expect the patterns of participation at the strategic decision-making levels of the hospital to vary according to differences in the strategic activity being considered.

In hospitals, strategic production function decisions about the transformation of inputs into a product or service depend more on the information-processing abilities and judgments of physicians than do other strategic decisions. The fundamental task of hospitals is executed by the application of physicians' expertise and values to problem situations and, therefore, the decision to alter a hospital's fundamental task would depend partly on information possessed by physicians.

Strategic decisions about marketing functions relate to the means by which customers are encouraged to purchase the service: advertising and promotion. These decisions require the information-processing abilities and judgments of a different set of organizational members than do decisions about production functions. Physicians possess a strongly held set of medical values about the promotion of medical services, and these are relevant to hospital decisions about marketing functions. Despite the importance of medical values for making choices about the promotion of medical services or about the kind of institutional image that is desirable, others in the hospital are likely to possess information that the hospital considers to be more useful for making such decisions. Physicians, who represent the core technology and who are responsible for the fundamental transformation of inputs to outputs, are more likely to be able to reduce uncertainty related to strategic production function decisions than strategic marketing function decisions. Thus:

> *Hypothesis 1. The participation of physicians will be greater in making strategic production function decisions than in making strategic marketing function decisions.*

Differences Due to Generic Strategy

Industrial organizations theory suggests that a hospital's performance, as with other organizations, is based on the structure of its industry and the position of the hospital in that industry (Porter 1981; Bain 1968). Strategic management theory (Porter 1980, 1985) suggests that firms achieve a position in the industry partly because of strategic actions that the firm takes. Within an industry firms differ in their strategies, yet in large industries strategic groups usually exist—that is, groups of firms with similar generic strategies (Hatten, Schendel, and Cooper 1978). A firm's generic strategy characterizes the activities that are important to the firm in its efforts to compete. Porter (1980, 1985) has identified two fundamental strategy types used by many organizations: *cost leadership* and *differentiation*. A cost leader achieves success by becoming the low-cost producer in an industry; by providing standard no-frills, good-quality service; and by placing emphasis on reaping scale or cost advantages from all sources. Differentiators seek to provide a service or product that is unique in the industry along some dimension widely valued by customers and for which a premium price can be extracted.

A firm's strategy type characterizes the way it views both its environment and activities within the firm. A hospital with a cost leader (Porter 1980) strategy has a world view that is different and that requires a different information-processing capability than does a differentiator (Porter 1980) hospital. For example, White (1986) suggests that cost leader strategies have much more certainty associated with them than do differentiator strategies, because cost reduction programs focus on internal processes familiar to the organization. Cost leader hospitals rely more heavily on information that enables them to improve efficiencies in production than do differentiators, who give more importance to information that enables the market to perceive them as unique in the industry (White 1986). The consistent-process view of participation suggests that cost leaders, who have a process-driven orientation, are more likely than differentiators to involve the technical core in any strategic decision. Thus:

> *Hypothesis 2. The participation of physicians in hospital strategic decision making will be greater in decisions made in cost leader hospitals than in decisions made in differentiator hospitals.*

Differences Due to the Interaction of Decision Content and Generic Strategy

The information-processing view of the firm suggests both a decision content effect and a strategy type effect on physician participation in hospital strategic decision making. The use of information for the reduction of uncertainty suggests that the kind of information needed for a specific decision will affect the pattern of participation. At the same time, a hospital's world view will make some information more highly prized than other information, regardless of the specific decision. An information-processing perspective suggests that it is possible that neither the fluid-process nor consistent-process view alone explains participation. Thus, an interaction effect for decision content and strategy type was predicted. Specifically:

> *Hypothesis 3. The differences between physician participation in strategic production function decisions and physician participation in strategic marketing function decisions will be greater for decisions made in differentiator hospitals than for decisions made in cost leader hospitals.*

METHODS

HOSPITAL STRATEGY

Hospitals were assigned to one of the two strategy categories based on their classification as either a cost leader or a differentiator (Porter 1980). To identify ten hospitals that could clearly be classified as cost leaders or differentiators, we surveyed the CEOs of 43 hospitals that had been classified into strategic groups in an earlier study (Ginn 1987). These previous classifications increased the likelihood that we would be able to distinguish hospitals that differed according to Porter's (1980) dimensions.

The CEOs of each hospital were mailed an instrument that asked them to indicate the relative importance of 20 strategic activities. CEOs were used as the organizational informant about strategy because they were viewed as the most informed on their firm's strategy (Chandler 1962), with their perceptions of the organization's strategies more closely aligned to external measures of strategy than the perceptions of other executives would be (Hambrick 1981).

Twenty-eight of the 43 hospitals (65 percent) responded to the questionnaire. The design of this study relied on theoretical sampling rather than representative sampling (Eisenhardt 1989). We sought to classify hospitals that represented two conceptual extremes. Responses

were provided by hospital CEOs for all but seven hospitals, in which cases the responses were made by an executive at the level of vice-president.

The 20 strategic activities included in the questionnaire were adapted from items identified by Dess and Davis (1984) as indicators of Porter's (1980) two strategy dimensions. We used the ten items that were identified by Dess and Davis as being most indicative of cost leader and differentiator strategy types. This resulted in a 20-item instrument used for assessing the relative importance of strategic activities. The items were rewritten in health care industry language (see Table 1 for the items used in the instrument). For each item the CEO was asked to evaluate the importance of that activity to the hospital's strategy (with 1 indicating no importance and 100 indicating extreme importance).

The reliability of the instrument was determined by evaluating the internal consistency of the items in the strategy classification instru-

Table 1: Items Used for Strategy Classification

	Alpha
Cost Leader Items – Version 1	
Maintaining operating efficiency	.67
Maintaining quality control	.60
Maintaining competitive pricing	.71
Developing existing medical services	.71
Managing supplies and inventory	.67
Cost Leader Items – Version 2	
Controlling costs through productivity improvement programs	.68
Maintaining mechanisms for assuring quality of medical services	.69
Making creative pricing agreements with payers	.71
Refining and improving existing medical programs	.70
Managing purchasing agreements	.67
Differentiator Items – Version 1	
Developing new medical services	.65
Promoting hospital name recognition	.68
Innovating marketing techniques and methods	.70
Controlling channels of distribution and referral	.67
Advertising	.62
Differentiator Items – Version 2	
Identifying new program thrusts for the hospital	.67
Creating community awareness of hospital specialties	.68
Performing market research	.63
Making special efforts to encourage physicians to refer patients to the hospital	.62
Using creative promotional techniques	.63

ment. Using a split-half reliability test, we found a correlation between the two subsets of .83 and a Spearman Brown coefficient of .91. In addition to assessing the internal consistency using the split-half reliability test, Crombach's alpha was computed and resulted in a coefficient of .68.

A composite strategy score for each hospital was determined by reverse-scoring the cost leader items and adding the scale values for each item. We viewed the two strategy dimensions as representing ends of a continuum much in the same way Hambrick and Mason (1984) placed similar strategy types on a continuum. Scores ranged from 502 to 1195 for the 28 hospitals. Thus, hospitals with the highest scores were classified as differentiators indicating, as Porter (1980) suggests, that activities related to product and market development were more important to the way the hospital achieved competitive advantage than were activities related to operating efficiencies. Those hospitals with the lowest scores were classified as cost leaders, indicating a higher priority for activities related to operating efficiencies than for activities related to product and market development. Ten hospitals, five from each end of the continuum, were selected for the study. The five cost leader hospitals had an average strategy score of 815 and the five differentiator hospitals had an average strategy score of 1065. The strategy scores of the two groups were significantly different at the .05 level.

We selected hospitals from the ends of the continuum in order to assure that we identified hospitals whose strategies represented conceptual extremes. The design of this study, much like the theory-building designs described by Eisenhardt (1989), relies on theoretical sampling in which cases are chosen "to fill theoretical categories and to provide examples of polar types . . . in which the process of interest is 'transparently observable' " (Eisenhardt 1989, 8).

DECISION CONTENT

Hypothetical strategic decisions[1] were classified either as production function or marketing function decisions by a panel of health care and strategy experts using the following procedure. Five health care experts were used to construct examples of hospital strategic decisions. The panel included the chief medical officer of a community hospital, the hospital's chief financial officer, two professors of nursing, and one professor of health care administration. The experts were given the definitions of strategic decisions—strategic production function decisions, strategic marketing function decisions, and other strategic

decisions—and were asked to construct a total of 45 decision situations—15 production function, 15 marketing function, and 15 other strategic decisions. The definitions given to the panel are indicated in Appendix A. This process generated 115 hypothetical strategic decisions (not every expert provided 15 decisions of each type). By eliminating decisions that were similar to each other or unclear, the list was reduced to 40 decisions.

The 40 decisions were presented to a panel of nine experts, the five health care experts who constructed the original decisions plus four experts in strategic management (two faculty members and two doctoral students in strategy). For each decision the expert was asked to indicate whether it was strategic, and whether it was a production function, marketing function, or other category of decision. Ten decisions, five in each category, were then selected for the experiment based on the interrater agreement of the experts. Table 2 presents the ten decisions used in the experiment and their respective interrater agreement.

PARTICIPATION MEASURE

Participation is a mechanism for the exchange of information. The capacity of this mechanism can be altered by changing the participants, and this has been the focus of much of the existing research on participation (Milani 1975, Strauss 1980). However, the capacity of a decision mechanism to process information is expanded not only by altering who participates but also by altering the timing, scope, and formalization (Galbraith 1977) of the process. Bringing participants into a decision process early expands the capacity of the organization to process information, and thus is an important component of participation. The capacity of the organization to process information is expanded by widening the scope of participation, that is, by including the participants in the various decision activities. The capacity is also expanded when multiple opportunities for processing information—for participation—are available.

The chief medical officer (CMO—medical chief of staff or his/her designate) of each hospital was used as the hospital informant about physician participation. In most hospital structures the CMO acts as a spokesperson for physicians and represents the physician viewpoint to other strategic decision makers. A measure of participation was generated by presenting each CMO with ten hypothetical strategic decisions. For each decision the CMO was asked to provide a numerical value utilizing a ten-point Likert scale for reporting the *proportion* of

Table 2: Decisions Selected for Quasi Experiment

	Proportion of Rater Agreement on Classification
Strategic Marketing Function Decisions	
1. Whether the hospital should attempt to become a market leader through being more innovative/aggressive in its pricing policies	8/8
2. Whether to enter into a contractual arrangement that provides a significant discount with a local HMO	6/7
3. Whether to alter the "package" price for maternity/delivery to keep prices in line with a change in price made recently by a competitor hospital	8/8
4. Whether to divide advertising resources between mass media efforts and direct mail efforts or focus on one approach	7/7
5. Whether to run an advertising campaign targeted at the public suggesting the use of the emergency room as a minor emergency clinic or to market the emergency room to physicians as an alternative location to their office for service delivery	8/8
Strategic Production Function Decisions	
6. Whether to expand capacity to provide long-term skilled nursing care	7/8
7. Whether to consolidate the pediatric services with another hospital in a cooperative arrangement	7/7
8. Whether to employ or contract out services of hospital-based physicians (radiologists, anesthesiologists, pathologists)	7/8
9. Whether to close a particularly highly specialized patient unit due to low occupancy	8/8
10. Whether to purchase a very expensive, highly specialized piece of procedural equipment	7/8

decision makers who were physicians, the *breadth* of medical disciplines represented, and the *timing* of physician involvement. Additionally, the CMO was asked to indicate the *decision activities* in which physicians played a part and the *organizational mechanisms* through which physicians participated. (See Appendix B for the questions used in the structured interview.) The responses to the activities and mechanisms items were measured on a ten-point scale (two points for each stage or mechanism indicated). The order in which the decisions were presented to the CMOs was altered from hospital to hospital to eliminate any ordering effect. The internal consistency of these components of participation was evaluated by computing Crombach's alpha, which resulted in a coefficient of .7576.

Participation was viewed as an aggregate measure of these related concepts; that is, a higher proportion, greater breadth, earlier entrance into the decision process, involvement through several mechanisms (committees, task forces, etc.), and being part of several decision activities (raising the issue, generating alternatives, choosing, etc.) implies more participation. Values for each of these items were summed, providing an overall participation score: a high score indicated high participation and a low score indicated low participation. No attempt was made to determine a priori weights for the various components of the participation construct. Figure 1 presents the participation hierarchy that identifies the various concepts we include in the notion of participation in strategic decision making. The use of an aggregate measure of participation enabled us to draw conclusions about the overall participation of physicians in strategic decision making. However, a richer understanding of participation occurs by examining the components of participation, in particular, the component that has to do with the numbers of physicians (WHO) and that which has to do with how physicians are involved (HOW).

Figure 1: Participation Hierarchy

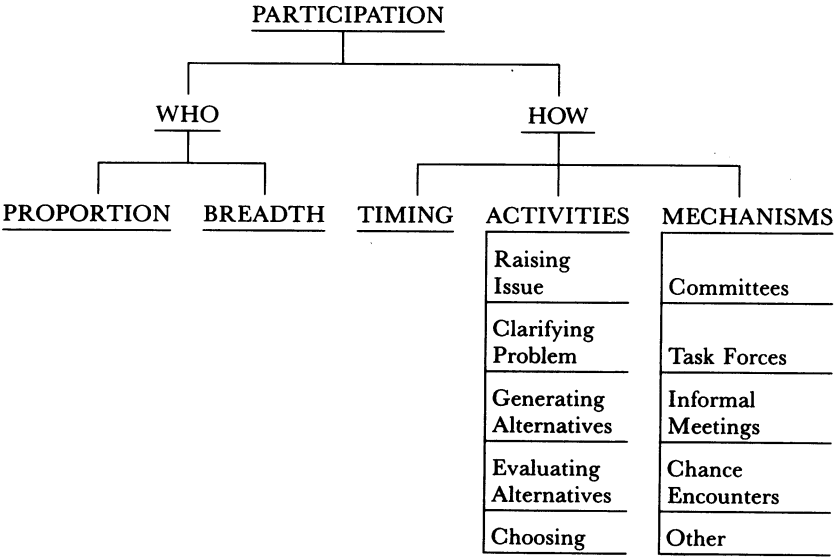

Figure 2: Split-Plot Design

		Factor A									
		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
Factor B											
B1 Cost Leaders	Block 1/Org.1										
	Block 2/Org.2										
	Block 3/Org.3										
	Block 4/Org.4										
	Block 5/Org.5										
B2 Differentiators	Block 1/Org.6										
	Block 2/Org.7										
	Block 3/Org.8										
	Block 4/Org.9										
	Block 5/Org.10										
		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
			Production Function Decisions					Marketing Function Decisions			

RESEARCH DESIGN AND ANALYSIS

Figure 2 summarizes the split-plot research design in which a group of blocks, in this case hospitals, was nested within the two levels of the strategy factor: cost leaders and differentiators. This design required a two-stage analysis in order to determine, first, if participation varied according to differences from one decision to the next and, second, if participation varied according to differences in the two decision content categories used in the study. The decision content factor was treated in the first stage of the analysis as a fixed factor with ten levels (for the ten different decisions). In the second stage, a posteriori contrast was made to determine if differences in the dependent variable (i.e., participation) were attributable specifically to the two decision content differences. This two-stage analytical approach had been suggested by Hays (1981) and Kirk (1982) as a way of using the *F*-test to identify general differences attributable to the two main effects and the interaction effect. Because a significant difference was found for the

ten-level factor, a posteriori contrast test was then conducted to make specific inferences about the two levels of the decision content factor.

The split-plot research design is a type of randomized block design in which blocks are nested within a factor of conceptual interest. A group of blocks nested within a factor is referred to as a plot. In this study the organizations were blocks nested within a strategy factor. The decision was the unit of analysis, just as a subject would be the unit of analysis in a psychological experiment. The split-plot design is a repeated measures type of design that takes into account the potential for intracorrelation of responses within a subject (in this case a hospital).

RESULTS

Table 3 reports the means and standard deviations for the dependent variables. Table 4 presents the results of the analysis of variance that determines whether differences in physician participation are a function of differences in hospital strategies or differences in decisions, or both. Also reported in Table 4 are the results of the contrast test that indicate whether or not the differences in physician participation by decision are attributable directly to differences in the content of the decision.

TEST OF HYPOTHESIS 1 (page 381)

The results shown in column 1 of Table 4 indicate a significant main effect for *decision content* at the .001 level for PARTICIPATION, as an overall construct, and for the components WHO participates and HOW physicians participate. Therefore, Hypothesis 1 was fully supported. Differences in the content of the decision, that is, whether it was a production function or a marketing function decision, accounted for differences in physician participation. Specifically, physician participation was significantly greater in operations strategic decisions that in marketing strategic decisions.

TEST OF HYPOTHESIS 2 (page 382)

Column 2 of Table 4 reports no significant main effect for strategy type and, therefore, Hypothesis 2 was not supported. However, as shown in Table 3, the values for each variable in cost leader hospitals were generally higher than for those in differentiator hospitals. This suggests that, while the differences were not significant, the decisions made in cost leader hospitals may reflect more physician participation than decisions made in differentiator hospitals.

TEST OF HYPOTHESIS 3 (page 383)

The results presented in column 3 of Table 4 indicate that the interaction of decision content and strategy type was significant for HOW physicians participate at the .01 level, but was not significant for the aggregate measure of PARTICIPATION or for the component WHO participates. Therefore, Hypothesis 3 was partially supported. The results indicate that *how* physicians participate is due to the combined strategy type and decision content ($F = 1.99$, $p < .05$). These results suggest that strategy modifies the relationship between decision content and the timing of participation, the number of mechanisms for participation, and the number of decision activities. This interaction, however, does not result in differences in actual participants or in the overall participation construct.

VALIDITY CHECKS

In this study we chose to use the responses of physicians regarding physician participation, because they represented the group whose behavior we were trying to measure and the topic was one that they were likely to have thought about and that they could, therefore, assess accurately. However, we obtained responses from CEOs, as well, about the participation of physicians. The analysis presented in Appendix C1 and C2 indicates that while CEOs generally reported slightly higher participation scores, the main effect for decision content and the interaction effect for decision content and strategy type prevailed for the overall measure of participation and for the "WHO" and "HOW" components.

LIMITATIONS

This study was exploratory. While the analysis of variance test used 100 observations, the number of hospitals used in the experiment was small. The observations were generated by asking CMOs of ten hospitals about the involvement of physicians in ten different hypothetical decisions. Due to limited resources the data were reported by two respondents per hospital. Future research in this area would be strengthened by increasing the number of respondents per hospital and by using multiple measures of the items used to assess participation. These limitations warrant caution in generalizing the results across all types of hospitals in all settings.

Table 3: Means and Standard Deviations

	Strategic Decision Content			
	Marketing		*Production*	
Strategy Type	*Mean*	*s.d.*	*Mean*	*s.d.*
Participation				
Differentiator	21.4	10.8	26.9	10.2
Cost leader	23.0	10.6	26.7	9.9
Who Participates				
Differentiator	11.6	7.3	13.2	7.3
Cost leader	11.7	6.9	12.1	6.1
How Physicians Participate				
Differentiator	9.8	4.1	13.7	5.2
Cost leader	11.3	4.4	14.6	4.7

a Scores ranged 1-50.
b Scores ranged 1-25.

Table 4: Results of the Analysis of Variance†

	Hypothesis 1: Decisions‡		*Hypothesis 2: Strategy Type*		*Hypothesis 3: Interaction*	
Variables	*Mean Square*	*F*	*Mean Square*	*F*	*Mean Square*	*F*
Participation	1805.6	2.97***	11.67	.03	619.9	1.02
Who	553.4	2.10**	7.56	.03	129.9	.49
How	586.9	4.51***	38.03	.58	258.9	1.99**

**$p < .05$.

***$p < .01$.

†Degrees of freedom: strategy type = 1, organization within strategy type (error term for testing interaction) = 8, decisions = 9, interaction = 9, error = 72.

‡The a posteriori contrast test resulted in a significant effect for decision content at the .001 level for every variable.

DISCUSSION

The central question addressed in this research was: What is the effect of hospital strategy type and decision content on the participation of physicians in hospital strategic decision making? The answer was that physician participation is a function of strategic decision content and, in part, is a function of the combination of the hospital's strategy type and strategic decision content. Two somewhat complimentary theories about hospital strategic decision making led to two alternative predictions. One theory suggests that physician participation is fluid across decision types because it is a function of the uncertainty in the decision

itself. The other theory suggests that physician participation is consistent across decision types because it is a function of the hospital's strategy type. We conclude that the participation of physicians in hospital strategic decision making cannot be explained by either the fluid-process view of decision making or the consistent-process view of strategic decision making alone. Rather, physician participation in strategic decision making is best understood as a function of differences both in the strategic decision *content* and in the strategic *context* in which those decisions are made.

We found that differences in the content of strategic decisions had a significant effect on the participation of physicians. Such a finding supports the Cohen, March, and Olsen (1972) notion that participant involvement in decision making "varies from one time to another" (p. 1). It appears that the hospital's attempts to reduce the uncertainty inherent in a strategic marketing function decision are different from attempts to reduce the uncertainty inherent in a strategic production function decision. Specifically, we found that physicians participated more in production function decisions than in marketing function decisions, suggesting that physicians can reduce more uncertainty in production function decisions than in marketing function decisions.

While differences in the hospital's strategy type did not result in significant differences in physician participation, we found that the interaction of decision content and strategy type resulted in significant differences in some elements of physician participation. A given hospital strategy causes decision makers to favor one kind of "solution looking for a problem" (Cohen, March, and Olsen 1972, 1). Thus, as the uncertainty inherent in strategic production function decisions differs from the uncertainty inherent in strategic marketing function decisions *and* as the hospital's "characteristic world view" (Starbuck and Hedberg 1977, 253) differs—that is, cost leader versus differentiator, the patterns of physician participation in hospital strategy making differ.

THE COMPLEXITY OF PHYSICIAN PARTICIPATION

The results suggest that participation is a complex construct that is not accurately measured by the kinds of general questions or measures typically used in studies of physician-hospital relationships. This finding is consistent with Greer's (1984) finding that physicians' roles in technology decisions are complex. When asked to report *who* participates, that is, the number of physicians and the number of medical areas that participate in strategic decisions, respondents indicated less

difference across decisions and across strategy types than when asked to report about the timing, decision activities, and organizational mechanisms for participation. The arrangement for *who* participates is dependent on decision content alone. On the other hand, the arrangements for *how* physicians participate varied according to the combination of decision content and strategy type. Knowing whether the decision concerns a strategic production function or a strategic marketing function as well as whether the hospital is a cost leader or differentiator informs us about the timing of physician participation, the number of decision activities (raising the issue, clarifying the problem, generating alternatives, evaluating alternatives, choosing a solution), and the number of organizational mechanisms for participation (task forces, committees, etc.), while it does not inform us about the number of physicians or the number of medical areas that participate. Our results show that for strategic production (marketing) function decisions in cost leader hospitals the number of physicians and number of medical areas participating is not significantly different than in strategic production (marketing) function decisions in differentiator hospitals. However, in strategic production (marketing) function decisions in cost leader hospitals physicians are involved earlier in the decision process, in a greater number of different decision activities, and through more alternative organizational mechanisms than in strategic production (marketing) function decisions in differentiator hospitals. Previous studies of participation have not accounted for the dynamic nature of physician participation within hospitals and between hospitals of different strategy types.

IMPLICATIONS

Three important implications result from this study. The first is that health services researchers, hospital administrators, and physicians need to be concerned with a variety of methods for enhancing the role of physicians in hospital strategic decision making. Our findings suggest that the participation of physicians in strategic decision making takes many forms. Increasing the numbers of physicians who are part of a decision process is only one way of increasing professional participation. Involvement of physicians early in the process, in many stages of the decision process, and through many organizational mechanisms represents other ways of increasing their participation.

The second implication is that hospitals compete in different ways for patients and that these different competitive approaches result in differential physician participation—in strategic production function

decisions and in strategic marketing function decisions. Some hospitals clearly see cost control as a competitive advantage and emphasize strategic activities such as operating efficiency, appropriate inventory supply, and quality control. Others see medical service uniqueness as a competitive advantage and emphasize strategic activities such as development of new services, advertising, and market research. When hospitals differ in the value they place on certain strategic activities, differences will occur in the way physicians participate in strategic decision making. It is important that both health care researchers and health care practitioners recognize these differences and begin, accordingly, to envision research questions, organizational designs, and processes.

The third implication is that the nature of strategic decisions must be carefully considered by researchers and hospital administrators, as well as by physicians, if they want to understand the role physicians play in today's health care organization. Using examples of only one kind of strategic decision may well lead to a misunderstanding of the actual level of physician participation in strategic decision-making processes. Physicians, of course, have different levels of the information required to reduce uncertainty in different kinds of decisions; therefore, their role in the decision process will not be consistent across all decisions.

APPENDIX A

Definitions Used by Panel of Experts for Classifying Strategic Decisions. Strategic decisions are those nonroutine, important decisions that involve allocating organizational resources to enable the organization to achieve or maintain a competitive advantage. In a more general sense, strategic decisions are decisions about how the organization chooses to align its competence with the threats and opportunities in the environment.

Strategic marketing function decisions are decisions about the set of organizational activities associated with providing a means by which buyers can become aware of the service to purchase, and encouraging them to do so, such as advertising, promotion, sales force, pricing, etc. These decisions may be motivated by a number of factors (including strategic production function concerns), but these should not be confused with the decision type itself.

Strategic production function decisions are decisions about the activities associated with transforming inputs into the final product form, such as packaging, assembly, and equipment maintenance in manufacturing firms. In hospitals these are decisions about how the

actual care is delivered, how the input (sick patient) is transformed into an acceptable final form (a well or treated patient). These decisions may be motivated by a number of factors (including strategic marketing function concerns) but should not be confused with the decision type itself.

Other strategic decisions are other decisions of great importance to the hospital that cannot be categorized as either marketing or operational in nature.

APPENDIX B

Questions Used in Structured Interview to Assess Participation in Each Decision

1. *Proportion* of decision makers who are physicians:

Very low proportion									Very high proportion
1	2	3	4	5	6	7	8	9	10

2. *Timing* of participation in decision process:

At beginning of process									At end of process
1	2	3	4	5	6	7	8	9	10

3. *Breadth* of participation in decision process:

Narrow range representing specific area of expertise									Broad range representing various areas of expertise
1	2	3	4	5	6	7	8	9	10

4. *Decision Activities* in which physicians participate:

Raising the issue	_____
Clarifying the problem	_____
Generating alternatives	_____
Evaluating alternatives	_____
Choosing from among alternatives	_____

5. *Mechanisms* through which physicians participate:

Established committees	_____
Specially created task forces or committees	_____
Informal meetings with CEO or others	_____
Chance encounters with CEO or others	_____
Other	_____

APPENDIX C

C.1: Means and Standard Deviations Using CEO Responses

	Strategic Decision Content			
	Marketing		*Production*	
Strategy Type	*Mean*	*s.d.*	*Mean*	*s.d.*
Participation				
Differentiator	21.7	9.7	29.7	8.5
Cost leader	24.6	7.9	32.8	6.2
Who participates				
Differentiator	10.7	6.4	13.9	6.1
Cost leader	11.3	5.5	16.4	4.5
How Physicians Participate				
Differentiator	11.0	4.4	15.8	3.2
Cost leader	13.3	3.5	16.2	3.2

a Scores ranged 1-50.
b Scores ranged 1-25.

C.2: Results of the Analysis of Variance† Using CEO Responses

	Hypothesis 1: Decisions‡		*Hypothesis 2: Strategy Type*		*Hypothesis 3: Interaction*	
Variables	*Mean Square*	*F*	*Mean Square*	*F*	*Mean Square*	*F*
Participation	3139.8	6.34***	227.5	3.62*	410.4	0.83
Who	1096.9	4.10***	68.1	2.13	83.2	0.32
How	632.9	7.0***	46.7	4.1	227.8	2.5**

*$p < .10$.

**$p < .05$.

***$p < .01$.

†Degrees of freedom: strategy type = 1, organization within strategy type (error term for testing interaction) = 8, decisions = 9, interaction = 9, error = 72.

‡The a posteriori contrast test resulted in a significant effect for decision content at the .001 level for every variable.

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NOTE

1. The use of hypothetical decisions rather than actual decisions has limitations. However, in previous research (Fredrickson and Mitchell 1984; Thomas and McDaniel 1990; Fredrickson and Iaquinto 1989) this approach has been used successfully to identify differences in strategic decision processes. More important, in every interview conducted as a part of this study, respondents supported our approach with confirming comments such as "we just went through something like this." This made us confident that the hypothetical decisions we were using had strong face validity. It is important to note that cost leader hospitals may emphasize production function decisions more than marketing function decisions. For exactly this reason we did not ask decision makers to tell us about physician participation in actual strategic decisions in their hospitals. The use of the same ten carefully constructed hypothetical decisions, whose content differences were known to the researcher but not to the subject, controlled for the possibility of a confounding effect between hospital strategy type and decision content.

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